

Evening School Opens March 24

In addition to the regularly scheduled classes in accounting, English, shorthand, math, typing, and general subjects such as bridge, blueprint reading, languages, rapid reading, etc., the Adult Education Program in Oak Ridge for the Spring quarter is offering some special courses.

A **Data Processing** course is primarily devoted to the step by step analysis and solution of problems using a computer and the FORTRAN language.

A **Gourmet Cooking** course will be offered, co-sponsored by the National Council of Jewish Women and will be taught by well-known Oak Ridge ladies. The course will include background of favorite dishes of foreign lands, also typical recipes from various countries. Entire meals will be arranged.

Modern Math for Parents will be offered so today's mamas and papas can keep up with Junior in school and help him with his homework.

Secretarial Skills Review Part II will include five CPS Sections skills testing, including dictated material to be transcribed, corrected rough drafts to be retyped, papers or reports to be edited and retyped, letters or memoranda to be composed, tabulated material to be arranged and typed.

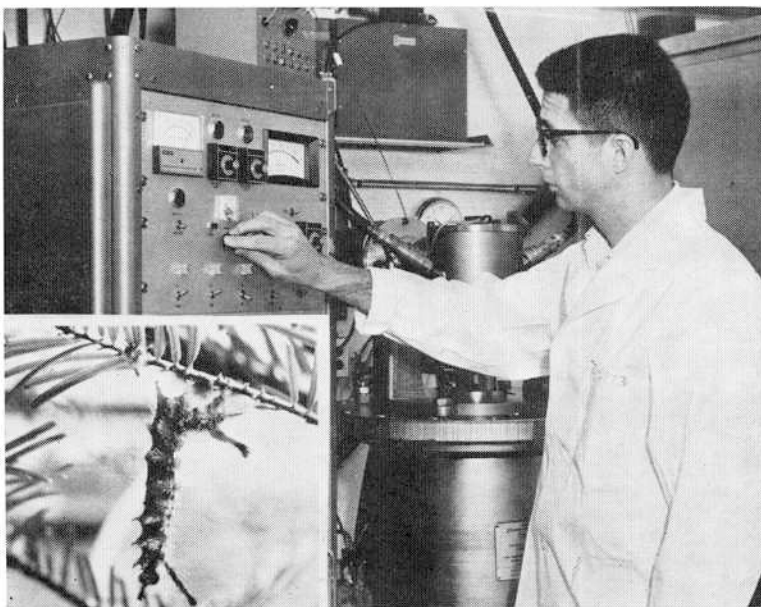
Registration for the Spring quarter will begin Monday March 24, and continued throughout that week. Classes actually begin March 31, and end June 6. All are held at the Oak Ridge High School.

Most of the courses (especially those that are job-related) are approved for reimbursement under the Carbide Educational Assistance Program.

SATISFACTION GUARANTEED

Who is more satisfied: a man with a million dollars or a man with six children?

The man with six children, naturally. The man with a million dollars always wants more!



DR. JULIAN BREILLAT, BIOCHEMIST with the Molecular Anatomy Program, operates a zonal centrifuge to purify virus material for use by the U. S. Forest Service in a research program to produce viral insecticides. The goal of the cooperative program is to produce virus material which will be harmful to only one insect species, while not endangering other forms of life. Inserted at lower left is the caterpillar of the tussock moth, a pest which causes widespread damage to Douglas fir trees. The Forest Service is now testing centrifuge-produced virus material that would attack the tussock moth 'specifically,' in preparation for experimental aerial spray of the virus material over selected woodlands.

\$750 Million Given To United Funds In '68

Last year more than \$750,000,000 was raised by 2,250 United Fund campaigns throughout the U.S.A. The agencies participating in United Fund campaigns benefit more than 27 million families through child care, family service, youth guidance, health programs, disaster relief and services to our Armed Forces.

TO WRONG A FRIEND

"He that wrongs his friend wrongs himself more, and ever bears about a silent court of justice in his breast, himself the judge and jury, and himself the prisoner at the bar, ever condemned," Tennyson.

Thermonuclear's Sellin Guest Seminar Speaker

A joint Physics and Atomic and Molecular Processes Seminar is set for Friday, March 7, at 3:15 p.m. It will be led by I. A. Sellin, ORNL Thermonuclear Division, and his subject will be "One-, Two-, and Three-Electron Atoms with Boosted Nuclear Charge."

The Friday seminar will be held in the East Auditorium of ORNL's 4500 building.

PASSING FANCY

"We are now passing the most famous brewery in Munich," related the guide.

"Oh, no we're not," shouted the American tourist, as he jumped off the bus.

MAN Program Seeks Virus To Control Insect Pests

The zonal centrifuge, the high-speed machine developed in Oak Ridge and used to prepare ultra-pure influenza vaccines in quantity, has been successfully enlisted in another major battle—control of insect pests through the use of host-specific viruses.

The new challenge, being met jointly by the U.S. Forest Service and the Molecular Anatomy (MAN) Program, is based on the centrifuge's capability to concentrate and purify viruses. In this application, the goal is to isolate virus material that will attack a particular insect pest "specifically"; that is, it will harm one and only one insect species. Such biological control agents are already being used in some cases in lieu of chemical insecticides which endanger other forms of life.

The MAN Program, jointly supported by the U.S. Atomic Energy Commission and the National Institutes of Health, is an interdisciplinary effort conducted by the Oak Ridge National Laboratory, and drawing upon resources of all three facilities operated in Oak Ridge by the Nuclear Division, Union Carbide Corporation, to the AEC. Its primary goal is to develop the biomedical and biophysical tools necessary for analysis of the human cell at the molecular level. The zonal centrifuge, the first major tool developed in the program, was the product of close cooperation between ORNL and the Oak Ridge Gaseous Diffusion Plant.

Douglas Fir Killer

The tussock moth, a destructive pest which kills Douglas fir trees, is the primary target in the Forest Service's current work with the MAN program. Extensive testing of centrifuge-produced virus material that would attack the tussock moth specifically is now being carried out by the Forest Service for later experimental use in aerial spraying of selected woodlands.

Collaborating in the insect-control project are Dr. Julian

Breillatt, MAN Program biochemist, Dr. Mauro E. Martignoni, principal microbiologist at the Pacific Northwest Forest and Range Experiment Station at Corvallis, Oregon, and Dr. Horace M. Mazzone, principal microbiologist at the Northeastern Forest Experiment Station, Hamden, Connecticut. Dr. Martignoni and Dr. Mazzone represent two regional Forest laboratories of the Department of Agriculture.

Dr. Martignoni and an Oregon State University graduate student, John Carnegie, initiated the project in 1967 when they asked the MAN Program for aid in purifying a particular virus known to be fatal to the caterpillar of the tussock moth.

Other Insects Unharmed

Dr. Martignoni knew that the target virus always killed the caterpillar, and experiments indicated that it would be harmless to other insects. The program was to separate in sufficient purity and quantity the virus material which could be used in making insecticide. Such a viral pesticide, he reasoned, could be used without affecting other insects vital to agriculture and forestry such as bees, wasps, and ladybugs, not to mention fish, higher forms of wildlife, and man.

In a series of experiments, directed by Dr. Breillatt, a system was developed to effectively isolate the needed virus material from crude caterpillar homogenate in one step. By using a continuous-flow rotor similar to that now used for producing reaction-free influenza vaccines, enough purified virus was separated to justify possible use on a commercial basis.

Bacteria Count Reduced

The material needed for the viral pesticides is concentrated in masses, called inclusion bodies, located within the cells of infected caterpillars. Crude caterpillar homogenate contains many bacteria, harboring an obvious danger if sprayed in watershed areas. Zonal centrifugation reduces the bacteria content from one bacterium per inclusion body in the unpurified state to one bacterium per 4,000,000 inclusion bodies in the centrifuge-isolated fraction, a level that should permit use in watershed regions.

The system is so effective that one teaspoonful of purified viral material will protect 80 acres. One rotor, in one day, can produce enough to be used in spray for 1,000 acres. Previous methods could produce only enough for small-scale research operations.

As obtained from the centrifuge, the viruses are contained in

Continued on Page 4



A. W. MAXEY, C. D. REYNOLDS, AND Z. L. ARDARY (left to right) are notified that a development they jointly advanced warrants a patent application for the United States Government. Harvey T. Kite, right, superintendent of Applied Chemistry Development, congratulates the Y-12ers as they receive their felicitations. Their development was entitled 'Fibrous Thermal Insulation and Method of Making Same.'

SAFETY SCOREBOARD

The Y-12 Plant Has
Operated
100 Days Or
2,959,000 Man-Hours
(Unofficial Estimate)
Through March 2
Without A Disabling Injury
SAFETY AT HOME,
AT WORK, AT PLAY

The Bulletin

Published Weekly For The
Y-12 Employees Of
UNION CARBIDE
CORPORATION



NUCLEAR DIVISION

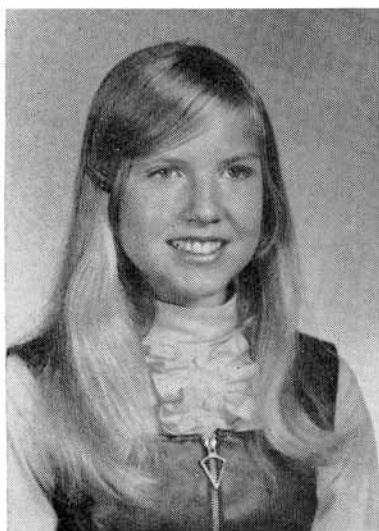
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'Miss Smile' Is Y-12er's Daughter



Sylvia Goode

The Walter Goode Jr. family is all smiles of late . . . because daughter Sylvia has been chosen 'Miss Smile.' Sylvia won the award above all eighth grade girls in Knoxville and Knox County schools. Part of National Children's Dental Health Week, February 2 through 8, the contest saw 35 entries from the Knoxville area. Little Miss Goode took a silver loving cup and a dental water spray kit for her efforts. Each entrant had to submit a photograph and an essay on "What Good Dental Health Means to Me."

In her essay, Sylvia stressed several points, foremost was the theme that good dental health now would be an invaluable asset when seeking employment in the future. She also pointed out that it is essential to good diction and public speaking. Proper dental health, Sylvia stated, is important in digestion and also improves one's over-all physical appearance.

Winning contests is getting to be a habit with Sylvia. She took a \$25 U.S. Savings Bond for her fire prevention post last fall . . . and took first place in the Farragut Talent Show with her rendition of "Somewhere Over the Rainbow."

Sylvia is a straight "A" student at Farragut, and is active in the Cadette Girl Scout in Troop 420. Her favorite subject in school is math, and she enjoys all sports in her spare time.

The proud father is in Y-12's Metallurgical Development. The Goodes live on Sonja Drive, Con-

Home Fire Drills Highly Recommended To Keep Family Familiar With Exits

Most parents would be upset if their children's school did not hold fire drills. Yet the same parents rarely teach their children how to escape from their homes and apartments where fire is 68 times more frequent than in schools.

The National Safety Council suggests that families map out escape routes from their homes and practice them often.

When people are unprepared by fire drills, they may follow dangerous routines in an emergency. Instinctively, they flee down hallways and stairs that may quickly fill up with deadly smoke and hot gases. Worried about brothers, sisters, or children, they re-enter burning buildings.

Other fire victims, who underestimate the speed of fire, try to squelch fires themselves before evacuating their homes. In one reported case, a housewife who found a chair smoldering in her living room ran to a neighbor's house to get help. The two women returned to lug the chair safely out-of-doors and complimented themselves on their quick action. Later, however, when the mother went upstairs to awaken her two napping children, she found them dead from breathing the toxic fumes that had risen up the stairway.

To avoid similar mistakes in a crisis, consider the following tips from the National Safety Council's home department:

- Call your family together now, and map out an escape route, and try to find an alternate route, usually a window, for each room of your house. Since you cannot count on using a hall or stairway to escape, the secondary routes are especially important. Pay special attention to escape ways from the bedrooms, but don't forget seldom-used areas such as the basement or attic.

- Take the family through the house to outline possible exits. While walking through, be sure that exits are not blocked by rubbish or furniture and that doors or windows have not been painted or nailed shut.

- During your tour, point out danger areas in your home such as stairways, halls, clothes chutes, or elevator shafts where air, and consequently fire, can flow freely.

- Decide on who should help small children, old people, or invalids in case of crisis.

- Set a meeting place outside the house in event of fire so that no one will return to a blazing house to rescue a person who is already safe.

- Emphasize that the whole family should be out of the house before taking time to call the fire department. Teach everyone how to notify the fire department by both telephone and closest alarm box. They should memorize the number of the nearest fire department by both telephone and closest alarm box. They should memorize the number of the nearest fire department, but all homes can display the number near the telephone. Instruct family members to give the house number and street location exactly if they phone. When they use an alarm box, someone should stay at the box to direct firemen when they arrive.

- Teach everyone to test their bedroom door before opening it into a hallway.

If the door's panels or knob feel warm, leave the door shut. A small rug or clothing may be stuffed along the bottom to keep heat or smoke from entering. If the door does not feel warm, you

should open it with caution. But always turn your head away from the opening, and brace yourself so that you can quickly close the door if hot air rushes in.

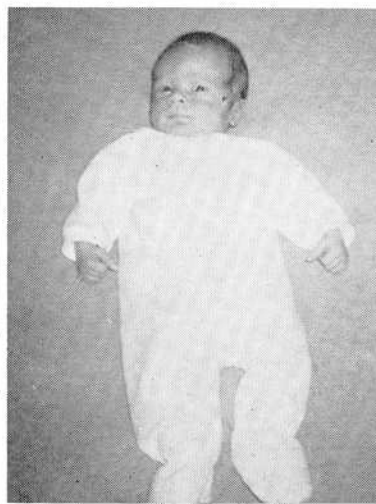
- If doors cannot be opened, the family should be ready to exit onto porches or ledges where they can wait for rescue. Teach them the proper way to open windows to porches. If windows and screens cannot be budged, remind the family that they can push them out with the legs of a chair. Use a shoe to clean remaining glass fragments out of a window frame.

- Have everyone practice how to get out of a window. First throw a leg over the sill and then back out. Never go head first. Only as a last resort, drop from an upper floor window. If you must drop, be sure that the ground below the windows is clear. Back out of the window, while holding onto the sill and then drop. Practice from a ground floor window only.

- Everyone should know what to do if their clothing or someone else's catches fire. It is best to smother these fires by rolling in a coat, rug, or blanket. Even rolling on the ground will help. By lying down you can keep flames from reaching your face. Running only fans the blaze.

- Remember, a fire drill only once or twice may not be enough, especially to train your children. In a Chicago suburb a few years ago, a family of seven with five children under age 10 escaped from their burning house within two minutes after the alarm was sounded. They exited swiftly because they had held a home fire drill every month for five years prior to the emergency. Your family can meet this test too if it will practice fire drill plans until escape routes become second nature to each family member.

The sure way to miss success is to miss the opportunity.



JOHN EDWARD Belew claims two Y-12 grand-dads . . . John R. Belew, General Machine Shop; and Leo E. Coling, a retiree from the Machine Shop. Johnny is the son of Mr. and Mrs. R. B. Belew, born January 29. Father was a co-op student here and mama a student nurse at St. Mary's Hospital. Arrival: Cincinnati.

ChemTech Holds St. Pat Dance

The Chemical Technology Division's 19th annual St. Patrick's Dance will be held Friday, March 14, at the American Legion Hall, Oak Ridge.

Members and guests of the division are invited to the social hour beginning at 8 p.m. Refreshments will be provided at no charge. From 9 p.m. to 1 a.m. the Alan Atkin band will provide dance music.

The intermission program will feature a skit, and a crowning of the 'Queen of the Green,' an award to the greenest ensemble present. Door prizes will also be part of the intermission scene.

For those who wish, breakfast may be obtained at Shoney's in Oak Ridge.

Dance tickets are available from section secretaries at \$2.75 each.

Canoe Club Calls Okefenokee Group

The Carbide Canoe Club is planning a return trip to the Okefenokee Swamp on Easter weekend, April 4-6. Some of the members plan to start a day early, Thursday, April 3, for a more relaxed and pleasant trip.

Camp will be at the Stephen Foster State Park, near Fargo, Georgia, which is about 500 miles from Oak Ridge. Fully equipped cabins are available for \$12 per day (for two persons); \$2 per day for each additional adult. Cabins must be reserved three weeks in advance through:

Mr. Lawrence Day, Supt.
Stephen Foster State Park
Fargo, Georgia 31631

Campsites are available at \$2 per site per night and cannot be reserved. Other groups are expected and early arrival may be required to secure a campsite.

The Canoe Club enjoyed this trip last fall on the Thanksgiving weekend.

Additional information may be obtained from A. S. Lyle, extension 3-6879.

Additional canoe orders will be filled with six or more requests, and may also be made through Lyle.

ASTME Dinner-Dance Is Saturday At Beaver Brook

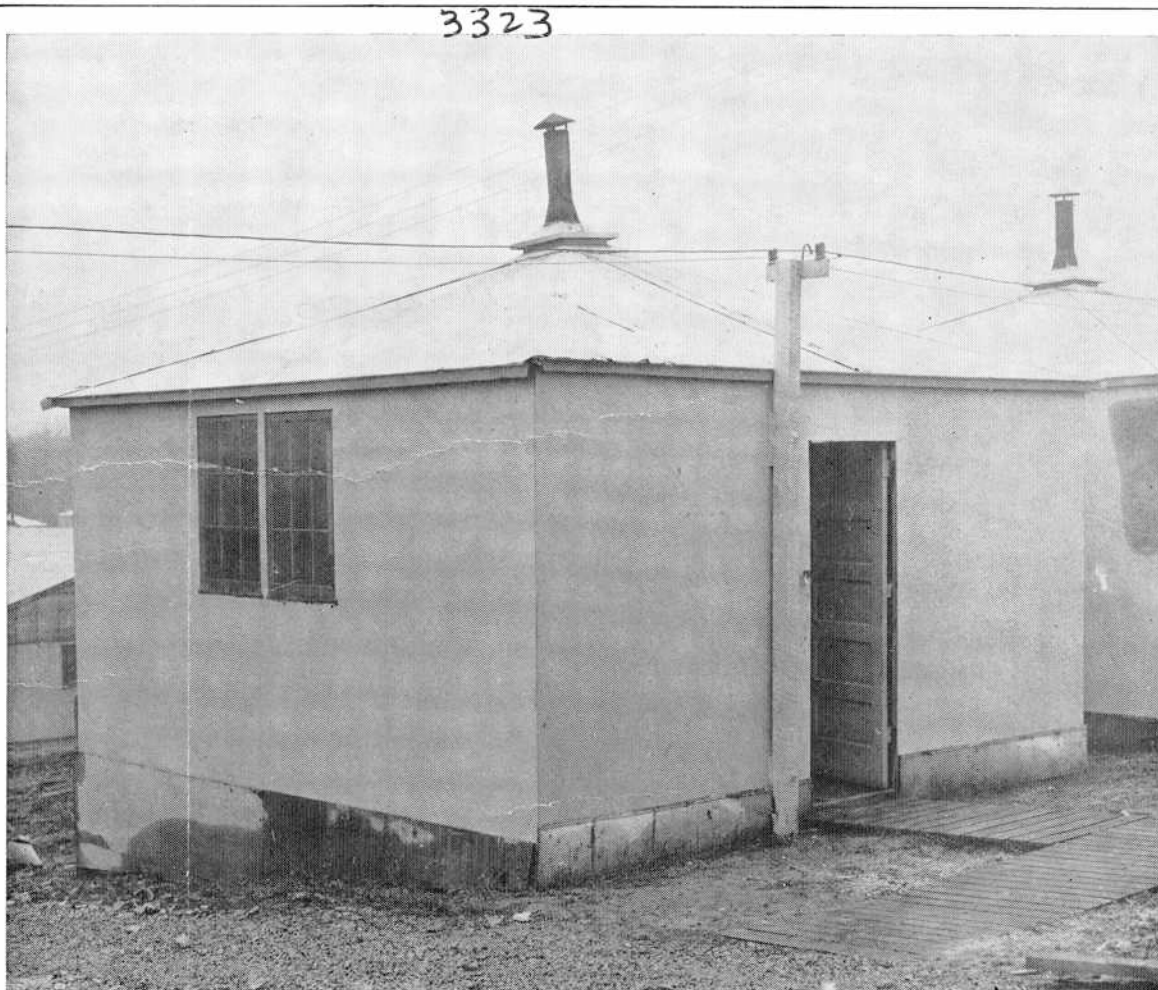
The American Society of Tool and Manufacturing Engineers will meet Saturday, March 8, at 7 p.m. for the installation of officers. The dinner-dance is set at the Beaver Brook Country Club, Knoxville.

Installation ceremonies will be coupled with a dinner and a dance, cost per couple \$8.

All ASTME members and guests are urged to attend Saturday's meeting.

IF AT FIRST

Did you stop trying because you failed . . . or did you fail because you stopped trying?



HOUSE BEAUTIFUL . . . from the early days. This was called a hutment back in the mid-forties when Oak Ridge was a roaring boom town. A multitude of these architectural beauties adorned the present Woodland section. Four men to a hutment in the old days. That stack in the center is exhaust from a pot-belly stove. Air-conditioning was unheard of in 1944, too!

SILVER LINING

One thing to be thankful for . . . we don't have to pay taxes on our debts.

Sign on a psychiatrist's door: Satisfaction guaranteed or your mania back.

GBU's Overpower Galliant Quarks

Action began in the Basketball League with no action . . . as the Dagmops showed with only four men to play the Biomedes. They went the first half . . . but then decided to let the game slip by forfeit.

The Bat Boys opened Monday's action with their finest game of the year . . . losing to the CC 69ers 55 to 48. The Boys ran out of steam in the final quarter. Hal Davidson and Lynn Story, along with Skip Hendrickson sparked the losing squad with 13, 12 and 12 points respectively. Bruce Marshall led the big 69ers with 17 . . . Wes Hightower scored 13.

The GBU continued their unrelenting march, downing the Quarks Monday 61 to 32.

The GBU team used their speed, rebounding and finesse to completely overpower the determined Quarks. Ron Gamrot dropped 24 through the net.

Tuesday's play opened as the Butter Balls creamed the Cobalts 62 to 42. The Balls were fat in rolling up their victory. Jim McCall sat in the driver's seat with Bobby Belt and Curtiss McGinnis pouring in the fuel. They out-classed the Cobalts on both boards.

The Guess Who team demolished the Bums in a rough and tumble foray Tuesday. The Bums tried in vain to make it a ball game, but condition was the big factor as the Guess Who's got balanced scoring to out-last the Bums.

The Ail Stars came alive in the second half to down the Bombers 47 to 38 . . . as both teams started cold. The second half saw big John White pour in 24 points (14 in the last half). It continued sluggish for these two teams who are capable of scoring much higher than this.

The Bombers sorely missed two of their starting five.

Wednesday's games saw two forfeit wins . . . the Carbide Trojans by the Soul Men . . . and the Dagmops over the K-25 Trojans.

The Computes made hash of the Beta 2 Miners 82 to 37 . . . Larry Finch and Jim Treadwell were red hot as they reached up for 26 and 31 points. They dominated the boards with Ralph Wormsley and Bob Alred getting most of the rebounds . . . then feeding the ball on to the scoring aces.

The final contest of the week proved no contest at all as the Isotopes team isolated the Cavaliers 57 to 19. The I team could have scored many more but felt pity for the Cavaliers who had only four players. Both teams couldn't buy a basket in the first quarter. The Isotopes got rolling in the second quarter and from then on it was a matter of how much the quality of mercy was strained.

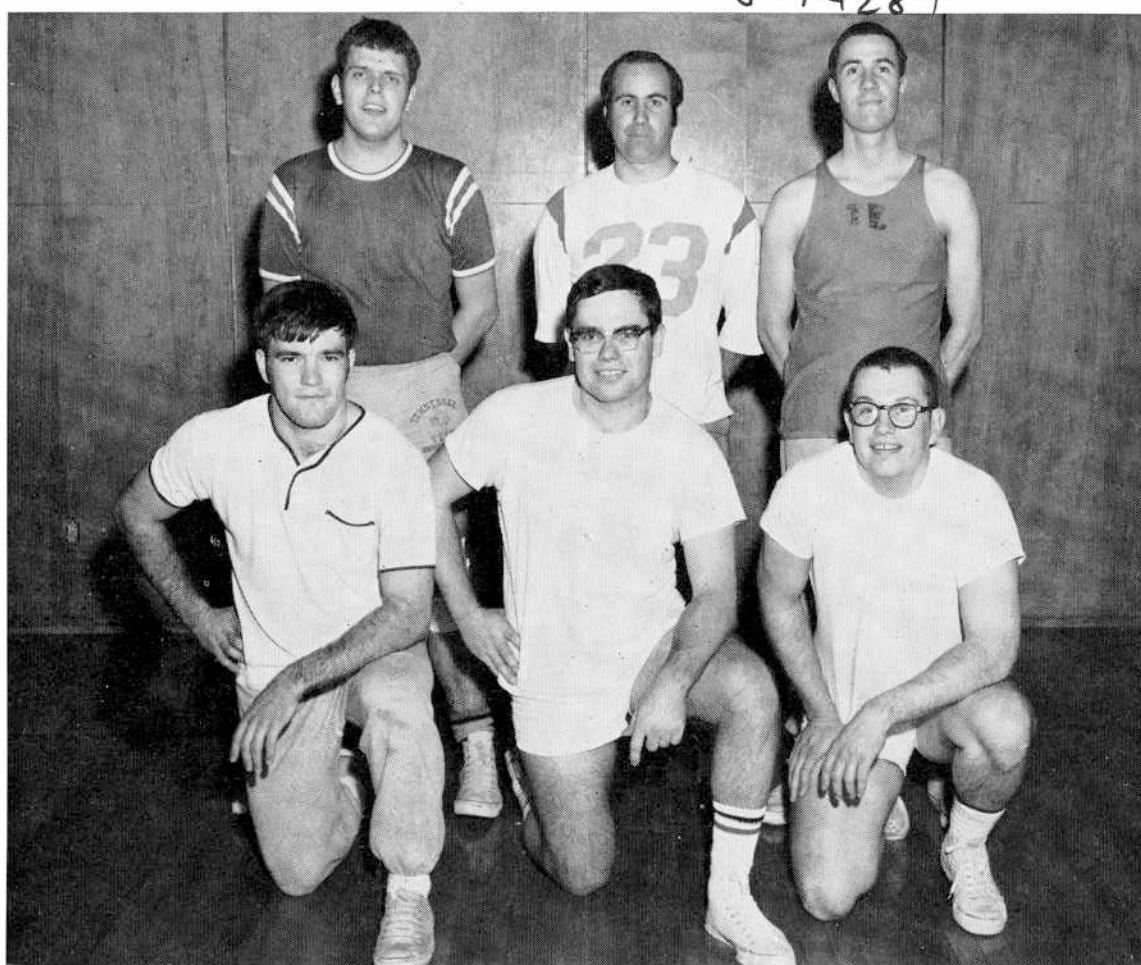
League standings follow:

Team	W	L
GBU's, Y-12	12	0
CC 69ers, Y-12	10	1
Computes, ORNL	10	1
Bombers, ORNL	8	4
Biomedes, ORNL	8	5
Butter Balls, ORNL	8	5
Beta 2 Miners, Y-12	7	6
Isotopes, ORNL	6	6
Quarks, Y-12	6	7
Carbide Trojans, K-25	6	7
Bums, Y-12	6	8
Cobalts, K-25	4	8
Guess Who, ORNL	3	9
Bat Boys, Y-12	2	11
Dagmops, Y-12	2	12
Soul Men, ORNL	0	12

Technical Division Party Set March 29

Members of the Technical Division, arise! March 10 is the announced date for tickets for the March 29 dance.

The dinner-dance party will be held at the Beaver Brook Country Club . . . over in beautiful



THE BIG BEAVERS REPEAT as winners in the Volleyball League this year. The big 'pros' are seen above, as six men showed up for play on this particular night. Kneeling from left are Larrf McDonald, Steve Babb, and Bob Culton. Standing are Robby Waters, Captain Rick Hull and Fred Wetzal. Not present are Jim Shoemaker, Loyd Wyatt and George Reece.

Recreation



Monday, March 10

TABLE TENNIS: 7 p.m., Oak Ridge Wildcat's Den.

BOWLING: C League, 5:45 p.m., Ark Lanes.

PHYSICAL FITNESS: (For Women): 7:30 p.m., Oak Ridge High School Girls' Gym.

BASKETBALL: Beginning 6:30 p.m. Oak Ridge High School Gym. Cobols vs. Biomedes; Dagmops vs. Bat Boys; Beta 2 Miners vs. GBU's.

Tuesday, March 11

PISTOL LEAGUE: 6:15 p.m., Oak Ridge Sportsmen's Association.

PHYSICAL FITNESS: (For Men): 7:30 p.m., Oak Ridge High School Gym.

BASKETBALL: Beginning 6:30 p.m. Oak Ridge High School Gym. Cavaliers vs. Bombers; Soul Men vs. Guess Who; Isotopes vs. Butter Balls.

CARBIDE CAMERA CLUB: 8 p.m., Donora Hall, Oak Ridge.

Wednesday, March 12

BASKETBALL: Beginning 6:30 p.m. Oak Ridge High School Gym. Bums vs. CC 69ers; Carbide Trojans vs. Computes; Ail Stars vs. Quarks.

BOWLING: Mixed League, 8 p.m., Ark Lanes.

Thursday, March 13

BOWLING: Classic League, 5:45 p.m., Ark Lanes.

ARCHERY LEAGUE: 5, 6 and 7 p.m. Indoor Range, Oak Ridge Sportsmen's Association.

VOLLEYBALL, TOURNAMENT: Beginning 6:30 p.m. Oak Ridge High School Gym. Court A: Defects vs. Gashouse Gang; ORAU vs. Naughts; K-25 Hawks vs. Old Men. Court B: Beta 4 Astros vs. M&C; Semanon vs. Set-Ups.

Knox County. Technicalities are already marking their calendars for Saturday, March 29. Details will follow, naturally.

Beavers Cinch Volleyball's 2nd Half To Become League Champs Once More

Y-12's Beavers cinched their title in the Volleyball League last week, with a four-game win over the ORAU team . . . 15-1, 15-11, 15-7 and 15-1. Other contests saw

Goofers Roll Big On Mixed Alleys

The Twisters keep a five-point margin in the Mixed League after last week's results. They won three from the Mustangs, while the Goofers gained four from the Rollers. Also posting four were the McSprays by the Hits & Misses, and the Roses 'N Thorns rolled by the Alley Cats by three.

Bob Hagood, Goofers, gained all men's honors . . . singles 214, 233 handicap . . . series of 584 scratch, 641 handicap. Lou Sahr, Twisters, took a 191 scratch single . . . Ann Lively, Rollers, rolled a 242 handicap single. Mildred Morris, Goofers, gained high series . . . 518 scratch, 638 handicap.

The Goofers rolled team highs all the way . . . singles of 687 scratch, 815 handicap . . . series of 2021, 2405.

League standings follow:

Team	W	L
Twisters	31	5
Goofers	26	10
Roses 'N Thorns	20	16
Hits & Misses	18	18
McSprays	18	18
Rollers	13	23
Mustangs	13	23
Alley Cats	5	31

Volleyball Tournament Begins Next Thursday

A double elimination tournament has been set for Volleyball teams who entered league competition this year. Top-seeded teams drawing byes were the Beavers, Nemesis and the Ecobums.

Play will take place on Courts A and B at the Oak Ridge High School gymnasium, beginning at 6:30 next Thursday, March 13.

Regular season play ends tomorrow, March 6, as the teams complete the last half of their schedule.

the Set-Ups down the Metals & Ceramics team 15-5, 15-1, 15-3 and 15-8. The K-25 Hawks downed their fellow plantsmen the Gashouse Gang 15-9, 15-6, 15-3 and 15-7.

On Court B the Nemesis nixed the Semanon 15-3, 15-6, 15-11 and 15-6. The Ecobums defeated Y-12's Beta 4 Astros 15-3, 15-4, 15-3 and 15-4. The Defects downed the Old Men 15-13, 16-14, 15-4 and 15-12.

The Beavers go unchallenged another year . . . as they won both halves of this year's league.

League standings follow:

Team	W	L
Beavers, Y-12	43	1
Nemesis, K-25	36	8
Ecobums, ORNL	31	13
K-25 Hawks	29	15
Set-Ups, ORNL	29	15
Defects, ORNL	28	16
Old Men, ORNL	26	18
Semanon, ORNL	23	21
ORAU	10	34
Naughts, ORNL	10	34
K-25 Gashouse Gang	11	37
M & C, ORNL	9	35
Beta 4 Astros, Y-12	3	41

Wyatt-Toth Lead Table Tennis Men

Loyd Wyatt continued across the third lap in the X Table Tennis League last week by downing Roy Huddleston two games and Steve Blum for three.

Jerry Keyes defeated Herb Mook for three . . . and Mook took Jerry Goldstein to the cleaners for three.

X League standings following:

Player	W	L
Loyd Wyatt, Y-12	5	1
Jerry Keyes, Y-12	3	0
Herb Mook, ORNL	3	3
Roy Huddleston, Y-12	1	2
Jerry Goldstein, ORNL	0	3
Steve Blum, K-25	0	3

In the Y League, Ken Toth placed three games better than Francois Kertesz, while Kertesz won two from Joe Lewin.

Gordon Brewer won three from Lewin and Bob Smith took two from the same victim.

Player	W	L
Ken Toth, ORNL	5	1
Francois Kertesz, ORNL	3	6
Gordon Brewer, Y-12	4	2
Bob Smith, Y-12	2	1
Ed Gambill, Y-12	2	1
Joe Lewin, ORNL	2	7

Tigers Keep Lead On Classic Alley

The Tigers lengthened their lead by one point . . . winning only one point . . . last week's Classic alley action.

Three teams took sweeping wins . . . the Splinters sank the Smelters, the Bumpers bumped off the Swingsters, and the Rippers roared by the Pinbusters.

Taking three were the All Stars by the Tigers, the Has Beens over the Markers, the Eagles past the Playboys, and the Cubs past the Rebels.

Sharing two were the Screwballs and Eightballs

Alan True, Bumpers, rolled a 233 scratch game, boasted to a 260 scratch handicap single! Bill Ladd, Swingsters, and James Halsey, Bumpers, rolling against each other, rolled series of 606 scratch. Jack McLendon, Has Beens, rolled a 662 handicap series.

The Bumpers belted out 927 scratch singles . . . while the Rippers rolled 1039 handicap in single count.

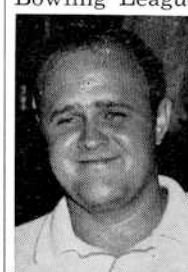
The Bumpers were best in series . . . 2772 scratch, 3105 handicap.

League standings follow:

Team	W	L
Tigers	28	12
Pinbusters	23	17
Splinters	23	17
Rebels	22	18
All Stars	22	18
Smelters	21	19
Has Beens	21	19
Eagles	21	19
Bumpers	19½	20½
Rippers	19½	20½
Screwballs	19	21
Swingsters	18	22
Markers	17	23
Cubs	17	23
Playboys	16	24
Eightballs	13	27

Big 5 Edge Toward C Top

The Big Five edged up one point on the leaders in the C Bowling League last week, after



Bill Sise

Norm Jarvis and Bill Sise both 'set the woods afire.' They downed the Instrument Engineers for the full count . . . as Sise rolled a 253 scratch game, 278 handicap single!

Jarvis posted a 621 scratch series . . . but lost handicap series to Sise who rolled a 677!

Other wins saw the Sunflowers also move up by walloping the Invalids for four . . . and the Rounders leveled the Fireballs, and the Jokers Five jinxed the Badgers . . . all for four also.

Taking three were first-notched Rollmasters by the Parbusters, and the Royal Flush by the Hi-Lifers.

The Big Five took singles high in scratch counting . . . 924 . . . while the Parbusters put in a 1052 handicap single. The Rollmasters rolled high in scratch series count . . . 2619 . . . and the Big Five returned to the boards with 2987 handicap series.

League standings follow:

Team	W	L
Rollmasters	28	12
Big Five	25½	10½
Sunflowers	23½	16½
Parbusters	22	18
Rounders	21	19
Jokers Five	18	18
HiLifers	19½	20½
Badgers	19	21
Fireballs	19	21
Instrument Engineers	18	22
Invalids	11½	28½
Royal Flush	11	29

EDUCATIONAL TOYS

They're making educational toys these days to prepare children for adult life, and the world about them. Anyway they put the toys together . . . is wrong!



THE MOLECULAR ANATOMY (MAN) Program was featured on the cover and in an article in the December issue of **Medical World News**, a weekly magazine published for the nation's physicians. The MAN Program, supported by both the National Institute of Health and the Atomic Energy Commission, is a feasibility study attempting to develop the biochemical and biophysical tools and techniques necessary for complete analysis of the human cell at the molecular level.



Riders wanted from East Knoxville area to West Portal, H Shift. J. W. Parker, plant phone 3-5068, home phone Knoxville 525-5590.

Note Of Thanks From Ken L. Faulkner

Kenneth L. Faulkner, who took medical termination due to poor health February 7, pens the following note from his Loudon home:

"I wish to thank my many, many friends from all departments of Union Carbide for remembering me in such a special way, the wonderful donations, cards and visits. I am grateful to each of you. Thank you again."

Faulkner was employed in Y-12's Laundry.



MAN Program On News Cover

The Molecular Anatomy (MAN) Program is featured on the cover and in an article in a current issue of **Medical World News**, a weekly magazine published for the nation's physicians.

The cover photograph shows MAN director Norman G. Anderson and researcher D. H. Brown using a zonal centrifuge which is enclosed within the specially designed Virus Isolation Laboratory, a containment center for isolating viruses under sterile conditions. The MAN Program's role in developing new techniques for extracting and culturing viruses is mentioned in the article, which deals primarily with National Institutes of Health cancer-virus programs. The article is entitled "Viruses and Cancer—The Trail Gets Warmer."

Interdisciplinary cooperation between Oak Ridge National Laboratory and the Oak Ridge Gaseous Diffusion Plant led to the development of the zonal centrifuge, the key instrument used in Oak Ridge and elsewhere to isolate viruses in sufficient quantity and purity for research.

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PICKY, PICKY

Watch picking fault with your off-spring. They very well may have used you as a pattern.

No classified document may be hand-carried outside the Oak Ridge area without proper authorization.



Blowing in the winds of March are more anniversaries with Union Carbide Corporation for more Y-12ers. Congratulations.

25 YEARS

Clarence E. Johnson, Safety Department, March 10.

William L. Coggins, Salvage Department, March 10.

15 YEARS

Harold N. Brendle, Special Production Scheduling and Coordination, March 5.

Leland D. Grice, General Shop Inspection, March 5.

Floyd L. Teno, 9766 Machine Shop, March 5.

Ralph E. Humphries, Tool Grinding, March 8.

Charles D. Ward Sr., G-3 Processing, March 8.

John R. Davis, Alpha Five Machine Shop, March 8.

James L. Lenderman, Dimensional Inspection, March 8.

James S. Elder, Buildings, Grounds and Maintenance Shops, March 8.

Jack K. Johnston, Dimensional Inspection, March 10.

Johnny H. Lauderdale, General Foundry, March 10.

William F. Henline, Assembly Operations, March 11.

Charles H. Turner, H-2 and F-Area Shops, March 11.

Carl M. King, Beta Two Shop, March 11.

Wade W. Clem, Dimensional Inspection, March 11.

Hubert W. Henley, Gage Certification Laboratory, March 11.

James H. Grantham Jr., Dimensional Inspection, March 11.

Frank D. Lively, Machine Tool Engineering, March 11.

Edsel F. Litton, General Machine Shop, March 11.

Sherman A. Morton, General Shop Job Liaison, March 11.

Frank J. Mason, Dimensional Inspection, March 11.

Larry N. Moncier, General Machine Shop, March 11.

Owen A. Moore, Quality Assurance, March 11.

Glen R. Owen, G-3 Processing, March 11.

Michelangelo Did Not Have Steel Chisel!!!

A recent 'filler' article in the Bulletin pointed out that Michelangelo suffered an eye injury while sculpting his famed "Pieta." The article cleverly stated that it was in the days before safety glasses.

An alert reader has pointed out that the article also stated that Mike was injured by a sliver of



TIME MARCHES ON! More than five years ago Jerry, Jimmy and Johnny Bullock's picture appeared in the Y-12 Bulletin . . . now the triplets are in school. They are named in the order given, not that it matters, for they are as much alike as three-peas-in-a-pod. They are the six-year-old sons of Charlie Bullock, Lake City, of Y-12's Buildings, Grounds and Maintenance Shops. Pity the first grade teacher at Briceville Elementary School when she tries to tell the boys apart!



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Stewart Son Cops Essay Contest Here



Joe H. Stewart III

The Clinch Bend chapter of the Daughters of the American Revolution recently announced the winners in the local essay contest . . . and Joe H. Stewart III, son of J. H. Stewart, Jr., Production Analysis, comes up a winner. Young Joe took the city-wide elementary school contest (first place) hands down with an essay on Betsy Ross, who designed Old Glory.

Joe, a student at Linden School, is in the fifth grade, and is interested in history . . . but his big interest, at the moment, is the Boy Scouts.

The Stewarts live at 171 North Seneca Road, Oak Ridge.

Of course, the essay has been entered in the statewide contest. The entire competition carries the theme of heroines of the American Revolution.

steel from his chisel. The reader points out that steel hadn't been invented either! The reader also points out that the great artist was only 21 at the time of the carving, and that he doubts that the eye injury was serious. (Our source of information has long since been lost . . . but the source did state that for three days the artist was in intense pain.)

Lion In Winter Next At Playhouse

Intensity of action, complexity of plot, and a great deal of wit characterize the Oak Ridge Playhouse's next production, "The Lion in Winter," opening Friday, March 7, at 8:20 p.m. An historical play with a difference, it will also be performed Saturday, March 8, and Friday, Saturday and Sunday, March 14, 15 and 16, with an extra performance set for Thursday, March 13. The box office in Jackson Square is open daily from 10 a.m. through 5:30 p.m. and reservations may be made early by telephoning Oak Ridge 483-1224.

Patty Austin, wife of Larry, Physical Testing, plays the part of Alais, sister of the king of France. Early in life, Alais becomes a member of the household of King Henry II of England and his beautiful, brilliant and very rich wife Eleanor. Henry loves Alais but must remain married to Eleanor since she controls a good deal of the real estate to which he is attached. The play covers a period over the Christmas holidays in 1183 during which Henry, Eleanor and their three sons battle in a manner grand to behold over which offspring the crown of England will go to and over which Alais will have to marry. Nothing is ever settled but plots, counter-plots, schemes of devilish magnitude and boisterous arguments mixed with tender moments make every moment exciting. As one critic put it, this is "the richest feast of dialogue that ever dazzled your ear."

"Lion" has been recently released as a highly successful movie starring Katherine Hepburn and Peter O'Toole.

MAN Program

Continued from Page 1
inclusion bodies. As such, they are enclosed within a capsule that is resistant to bacterial digestion, drying, weather extremes, and moderate acid conditions. In this form, they are potentially an excellent insecticide for aerial spraying.

Continuing Search

The development of new, highly selective virus insecticides is part of the Department of Agriculture's continuing intensive search for additional safe and effective methods for controlling destructive pests. Such new methods eventually could reduce the use of persistent, broad-spectrum chemical insecticides with their potential hazards to other organisms and the environment.

The separation principles involved in the tussock-moth experiment are also being applied in studies with inclusion bodies of the gypsy moth and European pine sawfly, from the Northeastern Forest Experiment Station, and the bollworm. Caterpillars of all these insects are killed by specific viruses.

If it weren't for your wife, think how bulgy and unsightly your wallet would be.